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FIG. 1. Pedestals along the inside of the north wall of the smaller court (Room 33).

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FROM THE PRESIDENT'S DESK

As the new School year begins there are many news items of interest to communicate to the readers of the BULLETIN. The members of our overseas staff have taken the field and activities are to begin shortly. At Jerusalem the School is in charge of Professor William L. Reed of Texas Christian University, who will serve as Director for 1951-52. During the interval between the departure of Professor Fred V. Winnett and the arrival of Professor Reed, Dr. A. Douglas Tushingham, formerly of the University of Chicago, served as Acting Director. He will remain as Annual Professor with Dr. Reed. In addition, we shall have as Honorary Visiting Lecturer at the Jerusalem School Professor Sirarpie Der Nersessian of the Dumbarton Oaks Library and Collection of Harvard University at Washington, D. C., who will devote herself to the study of illustrated Armenian manuscripts. As Fellows there will be in attendance Dr. Victor R. Gold, a graduate of the Johns Hopkins University, and Dr. Emmett W. Hamrick, a graduate of Duke University.

At Baghdad the American Schools will be represented again by Dr. Francis R. Steele, who has been serving as a member of the staff of the joint University of Pennsylvania-Oriental Institute excavation at Nippur. No independent operations have been planned for Iraq during the new academic year.

The work of the past year was brought to a successful conclusion in May-June. Both at Dhiban, where Professor Winnett was in charge, and at Karim Shahir in Iraq, where Dr. Bruce Howe of the Peabody Museum of Harvard University was working under the supervision of Dr. Robert J. Braidwood of the Oriental Institute of the University of Chicago, important results were achieved. These will eventually be presented in the BULLETIN by those responsible. Our gratitude is due to the Governments of Jordan and Iraq and to the Directors of Antiquities

in the two countries for the permission to excavate under their aegis. The members of the overseas staff during the past academic year have returned to their several institutions. To them and to the institutions they so creditably represented we owe our sincere thanks.

It is pleasant to report that six institutions have recently become members of the Corporation of the American Schools, namely, the Australian Institute of Archaeology, the Bethany Biblical Seminary, the Concordia Theological Seminary, Fuller Theological Seminary, Seabury-Western Theological Seminary, and the Southwestern Baptist Theological Seminary. We are happy indeed to enjoy the participation of these institutions in our work and look forward to the opportunity of greeting their representatives at the next meeting of the Corporation at New York in December.

It is a privilege, further, to acknowledge publicly the gift by Professor and Mrs. W. T. Semple of the University of Cincinnati of the sum of $5,000 as an addition to the endowment of the Schools. Professor Semple served for many years as a member of the Board of Trustees and persuaded us to relinquish further claims upon his counsel and energy only because of his precarious health. We appreciate his gift as a token of his continuing interest in the work of the Schools and through it will continue to benefit by his association with us.

During the past summer Professor Albrecht Goetze of Yale University has been visiting Turkey as the representative of the Baghdad School and has also been attending the Congress of Orientalists at Istanbul in September.

During the past spring your President made a full inspection tour of American School operations in the Near East, visiting Karim Shahir in Iraq and Dhiban in Jordan and spending some time at the School in Jerusalem. He was able to discuss the work of the Schools fully with Dr. Naji al-Asil, Director of the Iraq Department of Antiquities, at Baghdad, as well as with Mr. G. Lankester Harding, of the Jordan Department of Antiquities, at Amman. A full report on his visit will be given at the December meeting of the Schools.

CARL H. KRAELING,
President.

September, 1951

THE APRIL MEETING OF THE BOARD OF TRUSTEES

(Condensed Minutes)

The Spring meeting of the Trustees of the American Schools of Oriental Research was held at the Century Club, New York City, on April 14, 1951, at 1.30 P. M. Professor Speiser, the Second Vice-President, presided. Also present were: Messrs. Bull, Burrows, Hencken, May, Rabinowitz, Reynolds, Sellers, Whipple, Wilson of the Trustees; Messrs. Arbez, Bailey, Cooper, Detweiler, Johnson and Kelso of the Associate Trustees; Messrs. Jeffrey and Orlinsky of the Evaluation Committee; Mr. Goetze, Director of the Baghdad School, and Mrs. Walton of the New Haven office. Mr. Detweiler acted as Secretary *pro tem.*

The chairman spoke of the absence of Professor Glueck and Professor Cadbury owing to illness and Mr. Warrington's absence because of his imminent marriage. It was voted that the secretary send Mr. Warrington the congratulations of the Trustees. He then reported on recent activities of the Schools. In connection with the special appeal for funds for the Dhiban excavation over $1600 was raised from institutions and individual members. It was voted that the appreciation of the Trustees be expressed to all those who contributed. If more money is needed for this work, Mr. Rabinowitz has offered up to $300.

An advance copy of the April BULLETIN (122), published in honor of the sixtieth birthday of Professor Albright, vice-president of the American Schools and editor of the BULLETIN, was circulated among those present. The chairman apologized for not being able to include everybody in this issue. It was voted that the Board of Trustees congratulate Professor Albright on his sixtieth birthday.

A letter from Professor Pritchard reporting on the work at Jericho was read.

Dr. Bull read a telegram from Dr. Scott, who expressed regrets over his unavoidable absence and promised a report in December from the committee appointed to investigate our financial situation.

Three mail votes were approved as follows:

Acceptance of applications for Corporation membership from Concordia Theological Seminary, St. Louis, Mo., Fuller Theological Seminary, Pasadena, Calif., and Seabury-Western Theological Seminary, Evanston, Ill.

The application of the Australian Institute of Archaeology at Melbourne, Australia was considered and accepted.

Mr. Detweiler reported for the Jerusalem School Committee. He said that various names had been considered for Director and Annual Professor. It was voted that the question of the Directorship of the Jerusalem School be referred to the Committee with power, after consultation with Professor Pritchard who was due to arrive within a week. The matter of co-operation with the British School at Jerusalem on Miss Kenyon's projected Jericho dig was discussed at length. It was voted to authorize the Committee to make suitable arrangements with Miss Kathleen Kenyon for a collaborative expedition for the months of January, February and March, 1952 and that the sum of $2000 be appropriated for that purpose.

The report on the Baghdad School was given by Professor Wilson, chairman of the Baghdad School committee, and discussion followed President Kraeling's recommendations arising from his conference with Dr. Naji al-Asil, Director of the Baghdad Department of Antiquities. It was voted to instruct the President to convey to Dr. Naji al-Asil the following formal action:

1. that the Trustees express to Dr. Naji al-Asil their appreciation of his kindness in discussing so fully with President Kraeling the long history of the relations between the Kingdom of Iraq, the Department of Antiquities of Iraq, and the Baghdad School;

2. that the Trustees express their interest at hearing through President Kraeling about the creation of a national Iraq Institute of Archaeology as a branch of the Baghdad University, and that they would appreciate any information which Dr. Naji al-Asil may have on the further development of such an institute.

3. that the Trustees express to Dr. Naji al-Asil their pleasure at the continued usefulness of the library of the Baghdad School through the hospitality accorded to that library by the Iraq Museum, their intention of leaving the library on the same deposit for the present, and their willingness to study the possibility of filling in certain gaps in the library on the basis of the list held in the United States;

4. that the name of the Annual Professor of the Baghdad School for 1951-52 will be communicated to Dr. Naji al-Asil by the Director of the School within a short time.

Voted:

A. Dr. Francis R. Steele of the University of Pennsylvania to be annual Professor of the Baghdad School for 1951-52.

B. Dr. Steele to be accorded expenses up to $500.00.

C. Prof. Goetze, the Director of the School, to be authorized to visit Turkey in the summer of 1951, as the official representative of the Schools at the International Congress of Orientalists to be held there this fall, to investigate the possibilities for work of the Baghdad School in Turkey, and to undertake a project in the interest of the Schools.

D. That Prof. Goetze be accorded up to $3000.00 for this trip (anything further out of remaining $1500 of the $5000.00 appropriated in the 1951-52 budget.) If work in Turkey is feasible and would start before June 30, 1952, additional requirements would have to be included in the 1952-53 budget.

A Committee composed of Professors Burrows, Arbez and Johnson was instructed to prepare a minute on the death of Professor W. R. Taylor. The minute follows:

The death of William Robert Taylor on February 24, 1951 brought to an end a full and busy life of scholarship, teaching and administration. Born at Port Dover, Ontario, in 1882, he was educated at the University of Toronto, Knox College (Toronto), and the University of Berlin, receiving the degrees of M.A. and Ph.D. After three years in the ministry he was appointed Professor of Old Testament Languages and Literature at Westminster Hall (Vancouver, B. C.) in 1910. He became Professor of Semitic Languages at the University of Toronto in 1914 and continued in that position for the rest of his life. He received the honorary degree of D.D. at Queen's University in 1934 and at Victoria University in 1946. In 1945 he became Principal of University College. His administrative responsibilities did not put an end to his scholarly activity. From 1937 to the end of his life he was one of the most faithful and valuable members of the Old Testament section of the American Standard Bible Revision Committee, where his extensive familiarity with scholarly literature, his knowledge of Semitic languages, and his strict attention to grammatical details and the exact meaning of constructions and idioms enabled him to make a distinctive contribution. As representative of the University of Toronto in the Corporation of the American Schools of Oriental Research Professor Taylor maintained a long and close connection with the work of the Schools. In 1929-30 he served as Annual Professor at the Jerusalem School. While he had completed a full career, being at the point of retirement from teaching and administrative duties, he could have contributed much for years to come if he had been spared. Semitic and biblical scholarship can ill afford to lose such a man.

The question of nominating an Associate Trustee as successor to Dr. Taylor was referred to the nominating committee.

The budget for 1951-52 was discussed and adopted (attached hereto). $1000.00 was added to the Jerusalem School budget for additional expenses in connection with hostel refurnishing and library.

A. Henry Detweiler, *Secretary pro tem.*

THE LATEST PUBLICATIONS OF THE SCHOOLS

The completion of Nelson Glueck's publication of his brilliant explorations in Transjordan has been greeted with enthusiasm by all students of ancient Palestine. The four sections of his publication, in five volumes, will unquestionably acquire and hold a distinguished place in the history of the rediscovery of the Holy Land, which began 114 years ago with Edward Robinson. Parts I and II of Vols. XXV-XXVIII of the *Annual of the American Schools of Oriental Research* were finally issued in April, 1951, as *Explorations in Eastern Palestine*, IV (Pp. xix + 711, with 130 figures and 163 full-page plates in the text), at the very moderate price of $12.00 for both volumes (which will not nearly cover the cost of manufacture, even if the entire edition is sold). The present volumes

continue *Annuals* XIV, XV, XVIII-XIX, which dealt with Edom, Moab, and southern Gilead; they cover northern Gilead and the Jordan Valley. Here we have a wealth of material bearing on the archaeology, geography, and history of districts which played a rôle of great importance in the Bible. The author's full description of the sites and the beautiful photographs and drawings, together with an elaborate commentary on pottery chronology, will be of the greatest value to all students of the archaeology of anicent Palestine; the illustrated potsherds extend from the late Neolithic down to the Iron Age.

The publication of the Dead Sea Scrolls of St. Mark's proceeds steadily. This spring a second part appeared: Vol. II of *The Dead Sea Scrolls of St. Mark's Monastery*, Fasc. 2: *Plates and Transcription of the Manual of Discipline*, edited by Millar Burrows with the assistance of John C. Trever and William H. Brownlee (New Haven, 1951, 11 quarto plates of text and 11 pages of transcription, $2.00). This extraordinary Essene document, dating from the first century B. C. (but probably composed in the second century B. C.), possesses unique historical significance; by its remarkably prompt publication Burrows and his associates have deserved well of all students of the Bible (including both Testaments), of rabbinics, and of the history of religion. Now all can study these priceless pages, and the criticisms initially leveled at the scholars who have edited the scrolls of St. Mark's recoil on the heads of the critics. Never in modern history has there been a more earnest and unselfish effort made by editors of unique documents to get them before the scholarly public as adequately and as expeditiously as possible. When Père de Vaux publishes the five or so initial columns of this manuscript, which are in a very bad state of preservation, we shall be able to proceed with the definitive interpretation of the entire text. Meanwhile, Brownlee has issued a complete translation of the available text, with ample notes and critical remarks, under the title, *The Dead Sea Manual of Discipline* (BULLETIN, *Supplementary Studies*, Nos. 10-12, 60 pp., price $2.00). Owing to various delays, for which the undersigned editor is in part responsible, the monograph did not finally appear until early August, though in the printer's hands several months before. However, it has gained by the delays, and has been thoroughly checked in manuscript form by Drs. H. L. Ginsberg and Samuel Iwry, whose expert knowledge of Hebrew and Judaica has been of great assistance. The interested reader will find in the detailed appendices discussions of many topics of significance for historians of religions, including a four-page discussion of " The Chronology of the Dead Sea Scrolls " by the editor, bringing the subject up to date for July, 1951.

Other *Supplementary Studies* have recently appeared or are soon to appear. Last year Dr. Richard LeBaron Bowen, Jr. published *The Early Arabian Necropolis of 'Ain Jawan, a Pre-Islamic and Early Islamic Site on the Persian Gulf*, as Nos. 7-9 of this series (New Haven, 1950, 70 pp., $1.75 in paper and $2.00 in boards). This valuable study (on which see also BULLETIN, No. 119, p. 4) is very well illustrated and deals with a much wider field than suggested by the title. It is an important contribution to our knowledge of the still little known archaeology of ancient

Arabia. Our next issue will be devoted to the excavations of Professor O. R. Sellers in the Roman cemetery at Sîlet edh-Dhahr in north-central Palestine; it will be elaborately illustrated and will give a full account of the remarkable collection of lamps found there.

The *Biblical Archaeologist* has continued to win friends increasingly, and has reached one of the largest circulations (nearly 4000) ever known in an organ of this type. The first two numbers of the current volume (subscription one dollar a year) contain very interesting articles, intended for a general audience, on Dr. Paul Garber's adventures in "Reconstructing Solomon's Temple," on the excavation of "New Testament Jericho" by Dr. James L. Kelso, and the "Excavation of Tell Qasile" by Dr. B. Maisler, etc. Future numbers will include a broad general treatment of the Scroll of Discipline (see above) by Dr. W. H. Brownlee and an account of the second campaign in Qatabân (South Arabia) this spring by Gus Van Beek, who was a member of the expedition.

The *Journal of Cuneiform Studies*, ably edited by Professor Albrecht Goetze (who is now in Turkey), is now in its fifth volume and continues to be a necessity for Assyriologists, as well as for all who are interested in the recovery of the richest literature of pre-Hellenic antiquity as well as in ancient Oriental history. Vol. V, parts 1 and 2 have already appeared (subscription price $6.00 per volume); the main paper is S. N. Kramer's new revised edition of the text and translation of the Sumerian text of "Ishtar's Descent to the Nether World," incorporating much new material from tablets, as well as improved renderings. Vol. III of this journal, also just issued, is entirely devoted to a thorough study of the history and socio-economic life of the Babylonian cities of Nippur and Larsa by Dr. F. R. Kraus, until recently Keeper of Tablets in the Istanbul Museum and now professor in the University of Vienna (*Nippur und Isin nach altbabylonischen Rechtsurkunden*, New Haven, 1951, xiv + 209 pp., $6.00). The first part of the book advances our knowledge of the chronology of the first quarter of the second millennium very considerably, and the rest of the volume does the same for our understanding of the socio-economic life of Babylonia in the first centuries of the same millennium.

We wish to direct attention again to the recent appearance of two important Assyriological volumes in which the School in Baghdad is directly involved, since they are publications of two joint expeditions of the School, one at Tepe Gawra in coöperation with the University of Pennsylvania Museum, and the other at Nuzi in association with the Harvard Semitic Museum and the Fogg Art Museum. Arthur J. Tobler has undertaken to prepare *Excavations at Tepe Gawra*, Vol. II, for publication in a handsome volume of nearly 500 pages and plates, costing only $10.00; for an appraisal of the book and its contents see BULLETIN, No. 120, p. 31. The other volume is Professor Ernest R. Lacheman's publication of *Miscellaneous Texts from Nuzi* (*Excavations at Nuzi*, Vol. V), Part II: *The Palace and Temple Archives*, price $6.00. Here the historian and student of the ancient East will find very valuable material for reconstruction of the society and culture of ancient Nuzi

in the late Patriarchal Age (fifteenth century B. C.); for further details see BULLETIN, No. 118, p. 31.

In concluding this rapid survey of the recent publications of the Schools, the writer would like to say a few words *pro domo*. He wishes to thank the Guest Editor, Professor Speiser, and the sixteen other contributors who combined to prepare BULLETIN, No. 122 (April, 1951), in honor of his sixtieth birthday, May 24th, 1951. This was the best possible tribute, since the writer would have objected most strenuously to a heavy expenditure of time and money on the part of his friends, especially since he still has, *Deo volente*, years of active scholarly work ahead of him. The Guest Editor brought the number out in record time, several weeks before the anniversary in question. Thanks to the early appearance of the number, the writer was overwhelmed by congratulatory letters from friends all over the world, and has had many books and papers dedicated to him. Such tribute is far more heart-warming than a costly volume which would cause expense to many and hard work for others. He thanks these friends, one and all, for their kindness.

In this connection it may be announced that the second printing of the *Pelican Archaeology of Palestine* was issued in late July, after the first printing (50,000 copies) had been exhausted for several months. Many corrections in detail have been made, and a selected bibliography of some 40 titles has been added. The price (half a crown, or 65 cents in this country) remains the same. This autumn a bound library edition of the book on better paper, with wider margins, is being issued by the Penguin Press.

W. F. ALBRIGHT

THE 1951 CAMPAIGN AT HERODIAN JERICHO

JAMES B. PRITCHARD

The first two weeks of the 1951 campaign at Tulûl Abū el-'Alâyiq, near modern Jericho, were given over to problems arising from the discovery of the façade along the Wâdi Qelt toward the end of the previous season (BULLETIN, 120, pp. 11-12). Under the direction of Professor A. Henry Detweiler, of Cornell University, who had flown out to Jordan to make a study of the architecture of the façade and adjoining buildings, work was begun on January 9th in several trenches to the south of the center of the exedra. This work, carried on for the first two weeks with 50 laborers, resulted in the finding of a series of terrace walls along the slope to the south of the façade. Quite unexpectedly there appeared in the area just below the surface an undisturbed deposit of over two meters of Early Bronze and Chalcolithic pottery. The evidence for an extensive settlement in these earlier periods at what was formerly thought to be merely "New Testament Jericho" will be presented in more detail at a later date. Toward the end of the first two weeks of the campaign there appeared the foundation of the northeast corner of the

building, the clearing of which constituted the main objective of this season's work at Jericho.

Upon Professor Detweiler's departure on January 20th the excavation was entrusted to Professor F. V. Winnett and the writer, the latter having charge of the field work and the staff. Dr. Winnett took complete charge of the finances and on several occasions, when the writer was absent from the site, generously consented to assume his responsibilities. The catalogue was in charge of Dr. William H. Morton of Southern Baptist Theological Seminary, a Fellow at the School. Dr. Lucetta Mowry of Wellesley College, also a Fellow, worked throughout the season as one of the supervisors of laborers, cleaned all coins, and catalogued them with

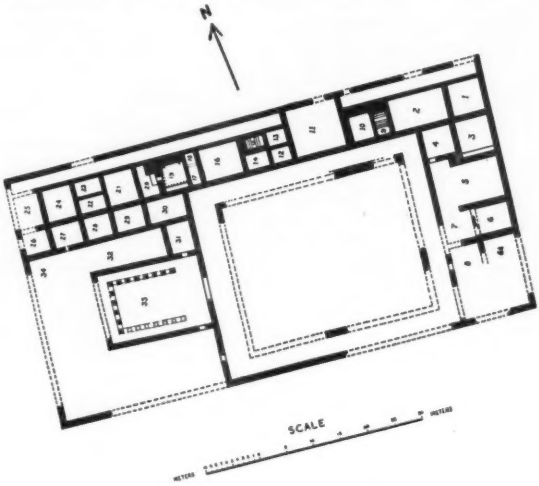

FIG. 2. General plan of building, showing major walls, but without pavements, water channels, drains, and other details.

the assistance of Mr. Dimitri C. Baramki. Other supervisors were the two Fellows, Father Roland E. Murphy, O. Carm., Catholic University of America, and Mr. J. A. Thompson, Australian Institute of Archaeology. For varying periods of time we had the help of Mr. Kenneth W. Ogden, a student at the School; Dr. A. D. Tushingham, University of Chicago; Professor Edward P. Blair, Garrett Biblical Institute, Chicago, who had conducted a sounding at 'Anâtâ in the spring of 1936. The surveyor was Mr. Subhi Muhtadi, who served in this capacity last year. Mrs. A. D. Tushingham, formerly of the Royal Ontario Museum in Toronto and a member of the staff at the Agora in Athens in 1947, performed valuable service in repairing pottery. Imran Effendi, indefatigable handyman and chauffeur, carried us without accident to and from Jericho every day for the ten weeks. The photography was done by the writer with the occa-

sional assistance of one of the members of the staff. Mention should be made of the help given generously by visitors to the excavation: Miss Kathleen M. Kenyon, Director of the British School of Archaeology, Mr. G. Lankester Harding, Chief Curator of the Department of Antiquities for the Kingdom of Jordan, Father S. Saller, of the Franciscan order in Jerusalem, and Awni Bey Dajani, of the Department of Antiquities. Père R. de Vaux, of the École Biblique in Jerusalem, made periodic visits to our work and frequently brought with him members of his staff at Tell el-Fâr'ah. He also lent us shovels and wheelbarrows, a loan which greatly facilitated the movement of masses of earth. The land was again this year generously donated free of rent by the three Husseini brothers, Hajj Mustafa, Nafez Bey, and Ali Bey, each of whom took an active interest in the findings of the season.[1]

The building whose clearing was the chief result of the season's work, was at the beginning completely covered over with cultivable soil. The area had been planted with tomatoes in the fall; by January the plants completely covered the area, except for two barren, stony areas, one about 60 meters southwest of the *tell* and the other about 85 meters to the west of the first. Between these two areas the tomato plants were not so luxuriant as elsewhere in the field. Upon the assumption that an ancient structure might underly this barren area, we began on January 13th to dig a plot 9 meters square to the east of the first barren area. In a few days we had uncovered the northeastern foundation wall of the building. From this point onward there remained only the following of the foundation walls. In the eastern portion of the building they were frequently covered by no more than a meter of dirt; in the west, however, the earth washed down from the hills had left a heavier deposit, so that the walls were sometimes as much as two meters below the surface. During the first three weeks work was carried on with 50 laborers; for the remainder of the season—we finished on March 20th—we employed 85 men.

The structure whose ground plan we were fortunate enough to recover almost completely, was rectangular in shape and lay approximately 60 meters southwest of the south *tell* of Tulûl Abū el-'Alâyiq (Fig. 2). The building was first traced at its northeast corner, where its foundation of dry rubble masonry extended downward to a depth of 3.57 meters. The structure, measuring 86.77 by 46.41 meters, consisted of rooms built around three sides of a large rectangular court, measuring 41.82 by 35.07 meters. Around the inside of this court there ran a foundation wall at approximately three meters from the outer wall and without connection with it, possibly a support for a peristyle. This possibility was strengthened by the finding of a number of column drums between the outer and inner foundation walls of the court. To the west of the grand court was an opening leading into a smaller court, 18.31 by 12.55 meters

[1] I wish to express my thanks to Professors W. F. Albright, James L. Kelso, B. Maisler, and John H. Young, who have gone over the plans and some of the pottery in Baltimore and have made many valuable suggestions. Dr. Young has also revised the text of this paper.

(Fig. 1). This too had within it, on only three sides, a foundation wall on which there remained one course of masonry together with several fragmentary and two complete pedestals of cut stones. To the southwest of this smaller court little could be recovered but the extreme corner of the building. The most complete rooms preserved were those built along the entire north side of the building. Among them were a tiled room (Room 19), two rooms with mosaic floors, a large reservoir and two

FIG. 3. The larger of the two stepped reservoirs (Room 9). Note the drain near the top of the basin, leading eastward.

smaller basins with steps leading down to the bottom (see Fig. 3 for the larger of these, Room 9). One of these basins, Room 15, was in size and construction similar to the so-called "bath" found at Samaria.[2] The tiled room (Fig. 4), whose floor was a meter lower than that of the room to the east of it, contained a number of interesting details, such as large floor tiles, roof tiles, supporting columns of terra-cotta discs, and 23 baskets of mosaic fragments, some of which preserved the designs which had been used in the floor. The pattern of a white cross on a black background seemed to predominate. Several pieces were found in which black, red, and white tesserae had been used in a circular pattern. Fragments of the spiral design, widely used in borders, were found.

The ground plan of the building was recovered almost entirely from

[2] J. W. Crowfoot, Kathleen M. Kenyon, E. L. Sukenik, *The Buildings at Samaria*, pl. LXXII, 2.

foundation walls, which had been laid in trenches cut into débris of the Chalcolithic-Early Bronze occupation of the site. The superstructure, built of well-cut sandy limestone—to judge from a few stones in place on the western wall of the larger court (Fig. 5) and fragments found in the débris throughout the excavation—had been almost entirely robbed in antiquity. The modern road which cuts through the southeast corner of the building, had in its foundation some of the better pieces of cornice

FIG. 4. The tiled floor on which some of the lower parts of columns are still in place, looking west.

which came from the excavation. In many places it was clear from the level surface on top of the foundation walls that the first course of the masonry of the superstructure had been immediately above. The foundation walls were generally built without mortar; exception to this was the masonry surrounding the reservoirs and Room 19, which employed a gray ashlike mortar between the rubble footing and blocks of limestone which were usually arranged in alternating courses. Walls averaged about 0.80 meter in width for the secondary and about 1 meter for the primary walls of the building.

The foundation walls throughout the rooms on the north side of the building seemed to be of one piece and evidenced a minimum of rebuilding. Bound into this section were the east wall of the building and the

rooms attached to it. The evidence for rebuilding was stronger, however, on the western wing, particularly at the point of the extreme western wall of the building, where there was considerable confusion due to later repairs. Much of the masonry at the southwest corner of the structure had suffered serious disturbance, probably because this area bore the brunt of the wash from the surrounding hills. Other parts of the building were better preserved because of the earth washed down from above, which settled in terraces formed by the heavy foundation walls.

With the exception of the pedestals remaining in the smaller court,

FIG. 5. First course of masonry on pebble foundation, remaining in the west wall of the grand court.

there was little architectural detail remaining on the foundation walls. Fragments of building stones, to which bits of painted plaster frequently adhered; column drums, some of them with mason's marks, capitals, both Ionic and Corinthian; bases, cornices, with dentil and egg-and-dart pattern; and many other fragments were found in the débris. These pieces were found in sufficient quantities to suggest that they had been used as part of a building on the site and not carried in from some neighboring structure to repair the building in this area.

The use to which the building was put is yet far from clear. At first one thinks of a dwelling, even of a palace. The chief objection to this view, however, is that the plan is not suitable. Another suggestion is that the building was a gymnasium or palaestra, as first pointed out by Dr. C. H. Kræling, then independently by Dr. John H. Young. The

plan is not unlike those found at the shrine of Asclepius near Epidaurus, Olympia, Miletus, Priene and Pergamon. In addition the presence of the three large cistern-like baths, the tiled room, and the cache of ointment bottles would fit nicely into this interpretation.

The pottery, while abundant, was generally of little value in dating the building. Lying as it does on a gentle slope leading from the hills of Judaea down to the Wâdi Qelt, the site has long been the depository of earth and stones carried down by occasional heavy rains. This movement has served to confuse the stratification of pottery by washing down the Chalcolithic-Early Bronze sherds from a higher level and depositing them with, or even over Roman and Arabic ware. The layers of deposit had been further confused in antiquity by the excavation of deep trenches for the foundations of the building. Most of the pottery was badly broken. One exception was the cache of 122 small pottery ointment bottles found just 0.70 meter below the surface within the smaller court; 38 of these were well preserved (Fig. 6).

While pottery from most of the excavated area seemed to be mixed, it was noticed that the forms found in the lower levels of the cistern-like structures (Rooms 9, 10, 15) presented a fairly consistent picture. For example, the pottery in the lowest meter of débris in the plastered pool (Room 9) did not contain any sherds of Chalcolithic-Early Bronze nor any Arabic pottery. Seventeen of the forms are shown in Fig. 7. Characteristic of Roman ware found elsewhere on the site and of the pottery found last season on the *tell* and along the façade are the following: (1) double-handled cooking pots of well-levigated, well-baked reddish-brown ware; (2, 2A, 17) loop handles with central ridge, from amphorae; (3, 13) collars of jars, with protruding band at base of collar; (4) fragment of ring base of sigillata ware, buff with reddish-brown glaze, badly worn; (5) juglet of finely levigated reddish-brown ware, with string-cut disc base; (6) base of small jar with ring base and domed center; (7) small bowl with slightly inturned rim, light brown; (8, 10) collared rims; (9) lentoid flask with twisted double handles, reddish-brown ware covered with cream slip; (11) neck of unguent bottle, well-levigated buff ware; (12) disc base of ribbed juglet, string-cut, light brown ware; (14) ring base of bowl, reddish-brown; (15) shallow bowl with folded-in rim; (16) rounded base of reddish-brown ribbed ware. Many of these characteristic forms were also found in the lower levels of the other two sealed areas, Rooms 10 and 15.

The lamps found throughout the excavation were predominantly those with a bowed spout and some of them were decorated with several small circles slightly incised. This type of lamp is widely known, and is generally termed "Herodian."[3]

With the possible exception of a doubtful coin of Alexander Jannaeus, the earliest coins found were those of Herod I, of which there were eleven. Twenty-seven bore the stamp of Archelaus; six were Herod Agrippa coins; and five have been identified tentatively as belonging to one or another

[3] *QDAP*, I, p. 109, where it is called "Herodian"; X, p. 30, fig. 14, 8.

of the procurators. Two of the Archelaus coins were found directly on major walls of the building. The presence of these forty-nine coins dating from the century covering the last third of the first century B. C. and the first two-thirds of the first century A. D., with the largest number from the time of Archelaus at the mid-point of this span, would seem to point to a major occupation at the time of Christ and perhaps to the construction of the building within this period.

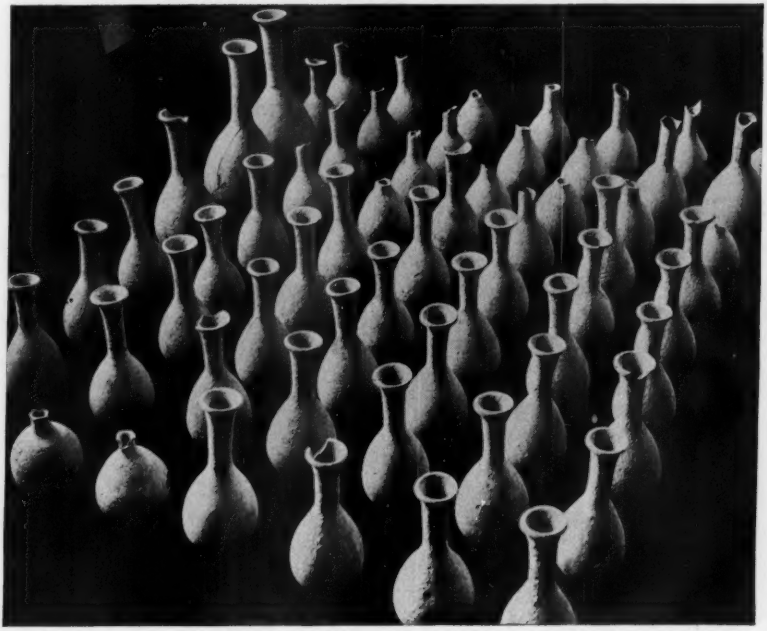

FIG. 6. Part of the cache of 122 ointment bottles found within the smaller court (Room 33).

The evidence from the coins suggests a gap in occupation after Herod Agrippa and the procurators. There were only five Roman coins of the third and fourth centuries, and eleven Byzantine coins of the sixth and seventh centuries. The eighth is well represented by 259 Arabic coins, most of which were found in the extreme western end of the building. It should be noted, however, that well over half of these coins were found in three hoards, containing 96, 40, and 15 respectively. The presence of eighth-century Arabic coins in great numbers in the west end of the structure coincides nicely with the evidence of a crude repairing of this end with many reused architectural fragments. That the west end was a part of the Roman structure and not merely an addition of Arab times, is indicated by the presence of by far the greatest number

of Roman coins in this same western area of the building. A close examination of the main walls of the building reveals that the major ones running east and west, as well as the east wall and the western wall of the grand court, are of homogeneous plan and construction. Tentatively it may be assumed that the lines of the entire structure were laid out and built during the Roman period, perhaps in the time of Christ, and that there was considerable reuse of the existing plan, with little addition except by way of repair, during the period of Arab reoccupation in the eighth century.

FIG. 7. Sherds from the bottom meter of débris in the stepped reservoir (Room 9).

The relationship of the building to the grand façade is not clear. On the basis of the pottery and coins found in each of these structures it would seem that they were contemporaneous. In addition there were found terrace walls which could have easily served the purpose of holding back the soil in which there were a series of gardens between the façade and the large building. While on the plan the orientation of the building with regard to the façade is such as to discourage a connection it must be remembered that the orientation of the façade was determined by the course of the *wadi* and that the divergence of the lines of the two structures is not visible except from the air or on a surveyor's plan. The lack of evidence for a series of steps leading up the hill from the exedra should not be emphasized, chiefly because the erosion of centuries in this

place would have long since destroyed any trace of a staircase. The most interesting difference between the two structures is the complete absence in the building of *opus reticulatum*, which was the dominant method of construction used in the façade and its accompanying structures. Yet it may well have been that this unique type of construction did not commend itself, or was not thought appropriate for the building to the south. Marion Blake in her study of Roman construction in Italy has noticed that *opus reticulatum* appears in rather few public buildings and was generally considered, it seems, an economy measure for buildings of lesser importance.[4] It would thus seem wise to withhold judgment on the question of relationship until the area between the two structures can be systematically excavated.

MICROFILMING MANUSCRIPTS AT JERUSALEM AND MT. SINAI *

KENNETH CLARK

Throughout the academic year 1949-50, the Schools were involved in a unique program of manuscript exploration. Indeed it was a double program, with activities divided between the Jerusalem Patriarchates and St. Catherine's Monastery at the foot of Mt. Sinai.

The Sinai expedition was carried out by the American Foundation for the Study of Man (of which Wendell Phillips is President and Professor Albright is First Vice President). It extended through the winter, over the first six months of 1950, and to this expedition the School in Jerusalem sent the Annual Professor and his wife, as well as the Two Brothers Fellow. In Jerusalem work was done directly by the School in Jerusalem. It was accomplished in two parts, before and after the Sinai expedition, so that the first phase in the fall of 1949 in Jerusalem constituted the pioneer chapter in the year's adventures.

Both projects were fulfilled through the cooperation of Luther H. Evans, Librarian of Congress, and the Library of Congress Photoduplication Service. The Library sent out its own photographer, with about a ton of cameras, film, and other photographic equipment. Microfilm in the service of scholarship is a recent development, and the Library of Congress is taking a leading rôle in its use. It has undertaken so far to record the state papers of Japan and Mexico, as well as a vast collection of official documents of our own states. But our project of last year was the first attempt to record the type of manuscript with which we worked, in such vast quantities and under such difficult conditions.

A special note should be emphasized here, because so many have misunderstood the primary nature of our task. It was not merely a matter

* A report given at the annual meeting of the American Schools of Oriental Research, at Union Theological Seminary, New York, Dec. 28th, 1950.

[4] Marion E. Blake, *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus* (Washington, 1947), p. 253.

of reproducing quantities of library materials. Rather, it involved a more exhaustive examination of the library collections than they have ever before received. The task was not merely one of passing a complete library under the camera lens. Instead, a staff of language specialists scrutinized, described, restored, evaluated, selected or rejected each manuscript, while they recorded descriptive and historical data that would be invaluable in any subsequent use of the resultant film. Only then did a selected manuscript pass on to the camera. The photography was but the final operation in the library, serving to transfer all further research on the manuscript to any interested scholar's desk throughout the world.

Let us turn our attention first to the Sinai Expedition. Hardly had we risen from our Christmas dinner at the Jerusalem School, when we began to pack equipment and personal belongings for this next venture. So it was about Christmas of 1949 that we loaded cameras, boxes, and luggage in two cars. Wallace Wade, the photographer, Howard Kee, our Fellow, and I (to be followed later by my wife) set out for Amman, whence we were to fly to Cairo. This was the only direct route, since Israel's occupation of the Negeb has cut off all land communication between Palestine or Trans-Jordan and Egypt. Even this air connection has since been stopped, but fortunately it did continue until our Sinai operation was ended.

On December 30th we stepped from the planes in Cairo, into a sun that was rarely to desert us through six months of work. Cairo was our Egyptian base. Here the American Foundation assembled both its Sinai expedition and its Aden expedition. Freighters brought to Alexandria, or on to Aden, vast quantities of equipment and supplies, from an airplane to thumb tacks. There were thirteen Dodge Power Wagons with great sand tires and special gears (two of them fitted out as photographic dark rooms), two sedans, generators, large refrigerators, typewriters, and an adding machine, which in so massive an operation turned out to be one of our most valuable items. Also there were numerous boxes and bags of food, and medical and office supplies. Out of all this, much had to be transported to the Monastery in the three trucks assigned to us. In addition, great quantities of fuel had to be stored at the Monastery and at the base camp on the peninsula, for in every round trip of the cars the greater part of the journey lay away from available service stations. We had to gather the full equipment for housekeeping in three places, in Cairo, at Abu Rudeis, and at the Monastery.

It was on January 21st that our convoy of trucks and sedan was ready for the journey along the traditional trail of the Children of Israel. There were thirteen of us, led by our Field Director, William B. Terry, who had led the University of California Expedition in Sinai in 1947-48 (BULLETIN, No. 109). Everyone had to have a desert pass because Sinai was a military zone. Once across the Suez Canal, we followed the coast road down the west side of the peninsula. We took on more food supplies at Sudr, a Shell Oil camp, where much of our food would be procured in the future. We drove by way of Ras Matarma, a Shell Oil camp,

where we would get most of our fuel for the expedition. We passed by Abu Zneimah, a government rest camp, and by the Merkha Port of recent discovery where the Egyptians landed on their way to the Turquoise Mines. We stopped that night, as on each trip thereafter, at our own camp at beautiful Abu Rudeis (made available to us by the Standard Oil people). These oil camps were the only communities we saw in all Sinai and their pipelines paralleled the desert tracks for many miles. From Abu Rudeis there was still a long and hard journey before us. From sea level we climbed to 5000 feet at the Monastery. Leaving the last sandy road, we struck eastward from the coast into the Wady Sidr. Four long hours later we pulled up at the Feirân Oasis, a lovely and refreshing spot where we were often to lunch. Then the last two hours of slow progress began.

We, like you, had long known about St. Catherine's Monastery. We had seen it in picture many times. We knew about Tischendorf's visits a century ago; of the destructive Uspensky, and of Gardthausen; of the sisters, Mrs. Lewis and Mrs. Gibson; of Rendel Harris, and Beneshevich and Carl Schmidt, and Hatch, and of others who had gone before. We had studied the partial catalogues available and knew in general what to expect in the library which was our objective. But now the moment was near when we would see the Monastery itself, could enter into the library, could explore the manuscripts, and—best of all—could record them on film and bring them back with no loss to the monks. It was a thrilling moment when the mountains parted and through the Wadi we first gazed upon those ancient walls.

The Monastery claims an origin about the time of Constantine the Great and the Empress Helena. Certainly Justinian was interested in it, and in his time there were probably thousands of monks living about the Mountain of Moses, of whom John Climacus is the most famous. Today there are only about ten monks living in the Monastery, although others of the order live in Cairo and at other points of assignment. There are old monastic branches at et-Tôr and at the Feirân Oasis. At the Monastery Father Joachim is Prior and Librarian, and he was assisted in the library by Father Evstratios, a vigorous monk of twenty-eight who had joined the order 16 months before.

The monks do not eat together, but each receives his meager portion of food from a common supply and cares for himself in his cell. They rise at 3:30 when the bells are rung by Evstratios. At four they begin the service which runs daily for three hours or more. After that, no breakfast, but only a demi-tasse of Turkish coffee. For Joachim and Evstratios, during the months of our work, there followed strenuous labor in the library throughout the day, and often at five o'clock they returned to the Big Church for vespers, followed by dinner and retirement. The other monks had various duties, such as making candles, filling lamps, caring for the twenty chapels, baking bread, and distributing some to the mountain people who live in caves or huts throughout the barren region.

The Monastery walls rise 40 or 50 feet high, and enclose an area of about 285 by 245 feet. It lies on the side of the mountain, and so has

many levels crowded with buildings of all sorts and sizes, with passageways and steps, which leave only small courts between. There are the Big Church, the bell tower, the mosque and its minaret, the residence of the monks along the east wall, the guest house along the west wall, and a great new building along the southern wall which is highest on the mountain side.

To care for guests was the duty of Father Evtimios, and he established us in the spacious new building. In addition to our private rooms, we had a very large work room fifty feet from the library. Adjoining this was a large dining and living room. Next came the kitchen and the cook's room, and beyond that the private apartment of the archbishop for his semi-annual visits. There was no heat, no light, no mail, no literature. We did have a portable radio, and occasionally heard good music and a bit of contemporary news. Because the work was so intensive through sixteen hours of the day, these deprivations were not too trying. But at 5000 feet altitude, in the dead of winter, the perennial cold of stone buildings was not well suited to sedentary labor.

Altogether about twenty persons were directly connected with the expedition, and as many more assisted from among the monks and the native Bedu. I was assigned the duties of General Editor, responsible for the selection and priorities of manuscripts to be microfilmed. There were 3300 manuscripts in a dozen languages. Several editors specialized in different language collections. Naturally the Greek manuscripts constituted the largest collection (about 70% of the library). In working through this massive body of material I had the assistance of Mr. Howard Kee through the first month, and of Mrs. Clark for over two months. Out of the total of 2289 manuscripts examined, about 1100 were selected for microfilming.

We did have some catalogues to help. In 1880 Gardthausen spent forty days at the monastery. He selected the more important and the older manuscripts to produce a catalogue in Latin of 1223 items. These were helpfully arranged in categories, and the present library numbers coincide up to that point. Here we had our best guidance. Thereafter we had much less assistance from the work of Beneshevich, published in 1914 in Russian, because its plan and content are less satisfactory. In the group of " straight text " New Testament manuscripts we were especially aided by the excellent catalogue of Professor Hatch, done after his visit in 1922. But throughout the entire Greek collection we carried out independent examination and description. This was not for the purpose of preparing a catalogue, because Father Andronikos in Cairo had already prepared one in 1924 in Greek. This was not made available to us, yet our expedition has helped toward its early publication.

The Arabic collection of about 550 MSS was done by Professor Aziz Atiyah of the Farouk I University in Alexandria, assisted by several other Egyptian scholars from time to time. About 300 were microfilmed. The check list of Mrs. Gibson was our only guide here, and the recent work should result in an adequate catalogue. Professor Gérard Garitte of Louvain spent three months with us to edit the 257 Syriac manuscripts,

the 90 Georgian, and the 41 Slavonic. Besides the Syriac check list of Mrs. Lewis there was little guidance in these smaller collections. Marr had described about forty of the Georgian manuscripts, but the Slavonic had been neglected. We microfilmed 159 of the Syriac books, and the other smaller groups completely. The six Ethiopic manuscripts, which had never been catalogued, were prepared by Professor Murad Kamil of the Fouad University of Cairo.

A most unusual feature of the Monastery library is its collection of firmans, of great historical value. They have been preserved since Fatimid times—over 1000 in Arabic, and 670 in Turkish. They have never been fully explored, but today a complete record of these texts is available in Washington, having been edited by Professor Atiyah and his assistants. Still another special feature were the miniatures, of which more than 1100 4 x 5's were made, the larger part of them new to scholarship. Almost all of them were in Greek manuscripts.

The monks agreed to a six-day week and a seven-hour day, from 8 to 5 with two hours out for lunch. Since they were not accustomed to such strenuous schedule, nor to any regular library hours, this was extremely generous. Yet it was also very intensive for an editor, who must spend another seven hours daily, as well as week-ends, in order to make the most of the library time. Experience had early shown that our rate of progress was determined at the cameras. Editorial work was adjustable, but the mechanics of the camera established within a narrow range how much could be photographed in a day. It was clear that we could not copy more than about half of the library, and this imposed the principle of selection. But the final result depended directly upon maintenance of the generator and camera, constancy of supply, and fidelity of operation. It was not anticipated that such an opportunity would come again.

We worked always in an emergency mood. Every decision was critical. If we decided not to photograph a MS, we would go away without it and it would not be available if wanted. The safest principle seemed to be, "When in doubt, photograph!" But it was equally true that whenever we decided to photograph one manuscript we were also deciding to let some other manuscript go. Thus whenever we had to decide about any one manuscript we had to keep our eye on the whole task. This required constant planning and re-planning.

Imagine in our large workroom a table in one corner where three people are processing Greek manuscripts. On the other side of the room at another table two people are preparing Arabic manuscripts. In another place, an editor examines Syriac books. At two microfilm cameras, operators are filming codices, while at the third the firmans are being run. Another camera makes larger photographs of miniatures in selected books. Enough manuscripts for all these people, for four hours of work, must be listed and drawn from the library shelves promptly each morning, and carried literally by the bushel basket to the workroom. All these manuscripts must be returned at noon, and at two o'clock a similar supply

for the afternoon must be made immediately available. Such a daily procedure was rigidly followed in order to make the most of our time.

By the middle of May the editorial work at Sinai was finished and we transferred our activities again to Jerusalem, leaving the photographer at Sinai until his work was completed. In Jerusalem we picked up again where we had left off at Christmas time. The Patriarch and Synod most graciously extended permission to work through the entire library of 2400 manuscripts. The negotiations in Jerusalem were undertaken directly between the American School and the Patriarchates, and there were always the finest understanding and collaboration with us in the scholarly objectives sought. A limited and highly selective assignment was completed in the Armenian Patriarchate. This included a number of remarkable codices found in the special Treasury. The wealth of miniatures is indicated by the 424 4 x 5's taken from only 32 manuscripts. At the Greek Patriarchate about 1200 manuscripts were microfilmed, and from 50 of them 695 miniatures were reproduced on 4 x 5 film.

The pattern of work at Jerusalem was much the same as at Sinai. In fact, this pattern was first established in the fall season at Jerusalem. The chief difference lay in the fact that here we were not so isolated. We lived in our quarters at the School, and took our meals there. But the Patriarchate in the Old City was also without lights, without heat, without electric current. Our own generator was set up in one entry off the library court, and cables led upstairs to three small rooms where the cameras were installed. There Mr. Wade, assisted by two Armenian natives of Jerusalem, carried on the technical work. In another entry, the editorial staff worked at a large table, and Father Aristovulos brought out the manuscripts from their cases in an old Nestorian chapel. We ourselves had full access to the shelves.

Each morning at 7:40 the group started out from the School for the Patriarchate. On the Greek collection, my wife and I were assisted by Mr. Kee in the fall and Miss Lucetta Mowry in the following spring. On the Arabic books, there was Dimitri Baramki. On the Syriac and Georgian, there was Umhau Wolf, assisted by Mrs. Wolf. On the Ethiopic collection, we had the help of Father Heilon from the Dominican École Biblique.

We had excellent guidance for the 1800 Greek manuscripts described in the great catalogue of Papadopoulos-Keramevs. The Arabic and Syriac had been listed by Koikylides, and the Georgian by the late Robert P. Blake. There were check-lists for the Slavonic and Ethiopic collections by Krasnoseltsev and Littmann, respectively.

To explain the editorial technique, let us take the Greek collection. By careful and repeated combings of the catalogues, we selected and requested those manuscripts most desired. Mrs. Clark made the first preliminary examination, which doubled our rate of progress. She first paged through a book to check its completeness and good order. She placed markers at new sections and titles, at miniatures or other special features. Checking for regularity of quire construction would reveal clues to points of special note. Last of all, but of great importance for film,

she saw that the manuscript folios were numbered with accuracy—a strangely difficult feat. It is rarely found that a numerator has worked without those errors that create many quandaries for the user of microfilm. Large numbers of the manuscripts required foliation for the first time, and we increased the chances for accuracy by checking with the quire formation.

Next the manuscript passed to the editor. Guided by the markers, he quickly translated titles and analyzed content. He recorded a physical description that would distinguish this manuscript from any other. The data had to be checked against available catalogues, and differences adjudged. Scribal notes, especially those containing dates and other historical notes, had to be deciphered. In general, it was a basic principle that all evidence must be secured from the original volume which could not, or could not so well, be extracted from the film. Conversely, it was our principle to sacrifice information that would consume considerable time and could be obtained from the film at home.

Then every manuscript had to have its formal caption to serve as a title page of the film. Wherever paintings occurred these especially had to be listed in detail, and every picture had to have its caption. The basic objective was to find that perfect combination of notes and photographic reproduction that would substitute completely for the original manuscript itself. Finally, after all selections had been made from the catalogues, the editor combed the shelves himself to examine every unselected book, in order to discover anything of value which might have eluded notice.

It was our objective to examine for ourselves every manuscript in each library. In general we included all books up to 1600 A. D. We included all biblical manuscripts. Every dated manuscript up to 1600 was done. Small language groups were done completely. For the numerous liturgical books of many types, we drew the line at the fourteenth century. Patristics were given high priority, and many later than 1600 were selected. We recorded all manuscripts dealing with classics, lexicography, philosophy, history, geography, astronomy, mathematics, musical theory, history of law and medicine, and medical treatises. A score of special requests came from American and European scholars, and their lists were included in full.

Altogether, throughout the year and in all three libraries combined, the Schools were instrumental in microfilming about 3000 manuscripts in twelve different languages. Larger pictures of 2300 miniatures were made, besides the 1700 historical firmans of Sinai. All of this reproduces nearly 1,500,000 pages of text, on nearly twenty miles of film. Almost all this material is brand new to the scholar.

In these old libraries there are an unusual number of old manuscripts. They date from the fifth century down, with a large number from the ninth, tenth, and eleventh centuries. We found many manuscripts on paper dating from as early as the ninth century, which revises the usual conception of the early use of paper.

Notable among manuscripts was the glorious Armenian Queen Keran

Gospels, covered on six sides with gold binding and containing a gallery of 150 miniatures. There were codices already famous of Job, of John Climacus, and of Cosmas Indicopleustes—all of them profusely illustrated. There was the volume of "Sacred History" from the Creation to Moses, with 367 miniatures. There was the Sinai Psalter complete on six leaves. There was an entire New Testament, hitherto unknown, written in 1242, which we insisted be brought back from the convent in Cairo. There were ancient, uncial copies of Old and New Testament whose witness to our text had never yet been learned. There were many manuscripts in the treasuries which had not been included in any catalogue.

A quarter of a century ago, Rendel Harris made his final trip to Mt. Sinai. He declared that the discovery of one new manuscript would make his venture successful. In the large expedition undertaken last year, it was gratifying to discover many manuscripts entirely new to us. We found many palimpsests. We discovered a vast art gallery of miniatures far beyond the previous knowledge of scholarship. We have rediscovered manuscripts which the librarian had reported lost.

And yet our primary purpose was not discovery in this sense. It was rather to place on scholarly desks at home this vast manuscript resource, where Everyman may turn explorer. These books have been known—most of them—yet unknown. They have lain for ages in monastic obscurity, where few men ever go. Most of the work on them remains to be done by hundreds of future scholars. Never before has so large and important a body of research material been presented *en bloc* to the world of scholarship. Numerous special requests have revealed much active research on which these materials bear. But all this is as nothing compared to the possibilities of the future, and all that lies ahead is discovery.

RADIOCARBON DATING OF CLOTH FROM THE 'AIN FESHKHA CAVE

O. R. Sellers

When in 1948 the first publications of the Dead Sea Scrolls appeared and scholars began their discussions, the question of dating was based on paleography and literary content, with various scholars arguing for different dates ranging from Hellenistic to mediaeval times. In 1949 excavation of the 'Ain Feshkha cave, where the manuscripts were reported to have been found, brought archaeology into the picture. Mr. G. Lankester Harding and Father R. de Vaux, who conducted the excavation, are two of the most competent archaeologists who have worked in Palestine. No one has seriously questioned their dating of the pottery as late Hellenistic. The few Roman objects which they found were apparently left in the cave by visitors in the third century A. D.

In the cave, with the pottery and manuscript fragments, was a con-

siderable quantity of cloth, which had presumably been used to wrap the scrolls and had been discarded when the cave was rifled. The Syrian Metropolitan, Mar Athanasius Yeshue Samuel, had obtained some similar cloth along with the scrolls now in his possession. At the cave Mr. Harding gave me a piece of the cloth, which I brought to America in August, 1949. In the following December, at the meeting of the Society of Biblical Literature in Cincinnati, I learned of the newly developed technique of radiocarbon dating developed by Professor W. F. Libby and his associates at the Institute for Nuclear Studies, University of Chicago.[1] Immediately I thought of the possibility of having my piece of cloth dated; but I learned that four ounces would be required and I did not have that much. My fragment was cleaned and analyzed by Miss Louisa Bellinger of the Textile Museum, Washington, D. C.[2] "It would seem," she wrote, "that [the] piece is native Palestinian linen. Save for the fact that the piece is antique, there is nothing that can be said about its date."

When Mr. Harding learned of the possibility of dating the cloth by measuring its content of Carbon 14, he arranged to have a quantity brought to America by Professor J. L. Kelso, who was completing his term as director of the School in Jerusalem. When I received the cloth from Professor Kelso I turned it over to Professor Carl H. Kraeling, who arranged with Professor Libby for the making of the desired measurement. In due time the work was completed at the Institute of Nuclear Studies.

In his report to Professor Kraeling on January 9, Professor Libby wrote: "We have completed a measurement on the linen wrappings from the Dead Sea Scrolls which you furnished us on November 14, 1950. . . . The date obtained is 1917 plus or minus 200 years, or 33 A. D. plus or minus 200."

This would place the date of the linen between 168 B. C.[3] and 233 A. D.; since the number 200 is intentionally rounded off, the actual date would lie between the early second century B. C. and the early third A. D. Thus the cloth in the 'Ain Feshkha cave is to be dated at some time in the period from Antiochus Epiphanes to Origen. Since some of the manuscript fragments in the cave were found adhering to the cloth, it would appear that these fragments were at least as old as the cloth. Thus manuscripts similar to the scrolls now in possession of the Syrian Metropolitan and Professor E. L. Sukenik were being produced in ancient times.

While it is true that no scholar or anyone else of scientific competence saw the scrolls in the cave, each bit of evidence supports the story of the bedouin who said that they took the scrolls from the cave. A hoax

[1] This is described in an article by Donald Collier in the *Chicago Natural History Museum Bulletin*, Vol. XXIII, No. 1 (January, 1951), reprinted in *Biblical Archaeologist*, Vol. XIV, No. 1 (February, 1951), pp. 25-28.

[2] Reported in BULLETIN No. 118 (April, 1950), pp. 9-11.

[3] Father Frank North kindly has called my attention to my mistake when in *Biblical Archaeologist*, Vol. XIV, No. 1, p. 29, I figured 33 A. D. minus 200 as 167 B. C.

would have involved a great deal of archaeological and paleographic skill as well as an elaborate conspiracy. The members of the Syrian community who made the clandestine excavation of the cave in the fall of 1948 would hardly have gone to their expense and trouble had they not expected to find something of value. And what would have led to their hope except their belief that the scrolls had come from the cave?

As Professor Burrows points out,[4] scientific tests to prove the date of the scrolls would involve the destruction of some of the material. If parts of the manuscripts could be measured by Carbon 14 their approximate date might be determined objectively; but, unless competent authority decides that four ounces of a manuscript should be sacrificed for such a test, conjectural dating of the scrolls will have to be based on their literary content, paleography, and their relation to objects found under scientific control in the cave.[5]

PROPER NAMES IN THE NEW ISAIAH SCROLL

DEWEY M. BEEGLE

The problem of the relative value of the Isaiah manuscript of the Dead Sea Scrolls (DSIa) for Old Testament studies has been discussed both pro and con. One aspect which has not been adequately treated is the proper nouns, both personal and place. Inasmuch as the text is unpointed, the only changes in vocalization which may be demonstrated, necessarily involve a *waw* or *yodh*. Before any sound conclusions can be drawn with respect to the proper names, we must face the problem of *waw* and *yodh* as *matres lectionis*.

According to Dr. Burrows, "The one point on which a decision not based on the manuscripts themselves has been unavoidable is the distinction between *waw* and *yodh*. While the Isaiah manuscript has two quite distinct forms, they are in general used quite interchangeably for both letters."[1] He has stated elsewhere: "The consonants *waw* and *yodh* are frequently indistinguishable. Except in ligatures, they have different forms, but these are so freely interchanged that it is often impossible to tell which letter is intended."[2] In fairness to Dr. Burrows it should be noted that he has modified his opinions a good deal in this respect. Therefore, any reference to his articles or to the *editio princeps* (edited by Burrows and Trever) will be solely to clarify the problem at hand,

[4] BULLETIN 122, p. 5.

[5] [For two discussions of the chronology and significance of the Scrolls which have appeared this late summer, see my remarks in H. H. Rowley's *The Old Testament and Modern Study* (Oxford, 1951), pp. 22-25, and in W. H. Brownlee's *The Dead Sea Manual of Discipline* (see above, p. 6), pp. 57-60. Attacks on the Hellenistic dating of the Scrolls are rapidly becoming irrational.—W.F.A.]

[1] *The Dead Sea Scrolls of St. Mark's Monastery*, Vol. I, p. xii.

[2] JBL LXVIII (1949), p. 200.

and the quotations cannot be taken as necessarily representing the authors' present views.

The writer has made a palaeographic study of all occurrences of *waw* and *yodh* in DSIa, at the same time comparing the Massoretic text (MT). The cases in which DSIa has clear *waw*, where MT has *yodh*, total ca. 61. The cases of clear *yodh* in DSIa, where MT has *waw*, are ca. 53. The doubtful cases, in which the forms are not clear *waw* or *yodh*, total ca. 66. Thus, there is a total of ca. 180 possible variations between DSIa and MT. An actual count of the occurrences of *waw* and *yodh* was made in seven of the plates (with average width of lines) with a resulting average of 328 per plate. The estimated total for fifty-three and a half plates is 17,548. In the interest of prudence the writer is using 17,000 as the total number of occurrences of *waw* and *yodh* in DSIa. Assuming that the 180 variations noted above were due to negligence on the part of the scribe, one could at most claim that the scribe interchanged these letters slightly over one percent of the time. On the other hand, it can be demonstrated [3] that about three-fourths of the variants are valid, thus raising the reliability of the scribe up near the one hundred percent mark. There can be no doubt that there are cases of *lapsus calami*: e.g. 44^{17} has *LBLYW*, whereas 44^{19} has *LBLWY*, but these examples are relatively rare. The common forms *YHWH* (Yahweh), *wayyō'mĕr*, *'iyyîm*, *GW'YM* (*gôyîm*), *Ya'ᶜqôb*, *Ṣiyyôn*, *'ênê*, and *'Adônay* almost without exception clearly distinguish *waw* and *yodh*. In other words, when clear *waw* appears in DSIa one may be assured that the scribe intended *waw* and not *yodh*. The reverse is also true. The resulting forms may prove to be wrong, but we must recognize the reliability of the scribe from a palaeographic point of view. The erroneous forms could be due to either of the following reasons: (1) the scribe misunderstood his *Vorlage*, or (2) the scribe faithfully reproduced his *Vorlage*, but the latter was in error.

Illustrative examples of the reliability of the scribe are as follows: (1) MT *rinnāh* appears 9 times in DSIa. With the exception of 43^{14} (which is written *defective*) all cases have clear *waw* (Burrows [4] and *editio princeps* read *yodh*). The scribe is clearly following another orthographic tradition which employed the form *runnāh*. (2) in $28^{10,13}$ the scribe consistently (as Burrows [5] observed) wrote *ṢY* for MT *ṢW*. (3) three times in 46^{7}, and once in 53^{4}, 55^{6}, and 62^{9} the third masculine singular pronominal suffix is written *HY* instead of MT *HW*. Burrows and Trever in *editio princeps* read *HW* (except 55^{6} where they read *HY*). These are undoubtedly Aramaic forms [6] (e.g. Dan. 4^{20}, 7^{13}) and further support the view that the scribe was influenced by his knowledge of Aramaic.

Having clarified the problem of *waw* and *yodh*, we are now ready to study the proper names.

MT *Šĕbnā'* occurs five times: 22^{15} as in MT, 36^{11} with *waw* superscript, and in $36^{3, 22}$, 37^{2} with a clear *waw*. This reading is in reality a hypocoristicon of *ŠBNYHW*

[3] Limitation of space prohibits a detailed study; see the unfinished dissertation of the writer.

[4] JBL LXVIII (1949), p. 200.

[5] *The Dead Sea Scrolls*, p. xii, n. 2.

[6] See G. R. Driver, JTS, Vol. II, p. 22.

(*Shubnayâhû*[7] "Return, I pray Thee, O Yahweh"), which is the "Shebaniah" found in Neh. $9^{4,5}$, etc. The vocalization is proved by Neo-Babylonian *Subunuiama* (pronounced *Subnyaw*). LXX *Sobnas* (36^3 in B), and the more general *Somnas* (SAQ) support this vocalization. The interchange of *M* and *B* presents no problem as cursive Greek forms of these letters were very similar and often confused.

For *Tartān* of MT (20^1) DSIa reads *TWRTN* (*Turtān*). The scribe is again correct in his orthography, as shown by Assyrian *turtannu*, a title (of an official) which etymologically meant "second in rank." The LXX gives a variety of forms, most of which employ two N's: *Tanathan* or *Nathan*. Thus, the LXX followed the assimilated Targumic form, perhaps influenced by Aramaic; cf. Dan. 2^7 *tinyânûth* "second time."

In 49^{12} MT reads *Sinîm*. DSIa has SWNYYM (Sewēnîyîm), which is correct for the inhabitants of Syene (Yeb), in Upper Egypt (Elephantine *SWN*). The LXX *Persôn* suggests that its *Vorlage* may have had a form similar to **Sûsîm*.

The name "Sepharvaim" in 36^{19} and 37^{13} is read SPRYYM in DSIa. In both verses, both cases of *yodh* are clear. The LXX offers a variety of forms indicating both the Hebrew and Aramaic forms of the name. LXX readings without an initial *S* are due to simple haplography because of the preceding *poleôs*. The phonetic shifts between *P* (bilabial surd stop) and *B* (bilabial sonant stop) and the sibilants *Š* and *S* are common in comparative Semitic philology; thus we are able to equate this name with that of Šabarain in Syria. The Babylonian Chronicle[8] has *Š*, but after an Assyrian source where *Š* represents Aramaic *S* and vice versa. The "Sibraim" of Ezek. 47^{16} is another spelling of the same name. Its exact location is unknown, but *The Westminster Historical Atlas of the Bible* locates it near Riblah, an identification which is in accord with the context.

"Remaliah" occurs five times in MT. The occurrence in 8^6 is missing in DSIa. The MT form occurs in 7^4, but in $7^{1,5,9}$ a clear *waw* is written. LXX are virtually unanimous in support of the reading *Romeliou*, thus verifying DSIa. *RWMLYH* might be explained as the precative use of *la* with the meaning "May Yahweh Verily be Exalted" (equivalent to *Yᶜhôrām*). Ingholt discovered a graffito at Hamath on which was found *'Adôn-la-rām*,[9] an Aramaic form corresponding to Hebrew *'Adônîrām* (I Kgs. 4^6, 5^{28}), but with the precative use of *la*. Such Amorite forms as *Ṣidqu-la-nasi*, "May Sydyk Verily be Exalted," lend further support. The shift of the theophorous element from the first of the name to the last is seen in "Jehoiachin" and "Jeconiah." The chief difficulty of this explanation would be the use of *la* following the verbal element. However, such a form cannot be ruled out entirely because of its seeming abnormality. A better explanation may be the Ugaritic particle *L* used after imperatives with the force of a vocative. Thus **Rûmlāyâhû* could be interpreted as meaning "Be Exalted, O Yahweh." This is actually found in *LRKB*, "O Rider," in Psalm 68^{34}. The etymology based on the Arabic root *RML* is purely *ad hoc*.

The name "Sharezer" in 37^{38} has a clear *waw* in DSIa between ' and *Ṣ*. Though the theophorous element is missing, this name reflects well known Accadian names such as (*Nābū*)-*šar-uṣur*, "O (Nābū), Protect the King." The abbreviated name *Šar-uṣur* appears in late Assyrian texts.[10] It is clear that the scribe of DSIa employed a more ancient and accurate form of this name than did the MT.

"Hezekiah" apears thirty-three times in Isaiah. In MT the form in 1^1 is *Yᶜḥizqiyāhû*, while the remaining 32 occurrences in Chapters 36-39 read *Ḥizqiyāhû*. DSIa has the former reading three times (with *yodh* superscript in 1^1), and the latter five times. However, nine times DSIa has *ḤWZQYH* (**Ḥuzqiyāh*) with a *waw*, and sixteen times *YḤWZQYH* (**Yᶜḥuzqiyāh*). The former can be explained as meaning, "Yahweh is my Strength," using as a basis the noun *ḥōzĕq* (Ex. $13^{3,14,16}$ Amos 6^{13}, and Haggai 2^{22}). An original **Yeḥzaqyâhû* > *Yᶜḥizqiyāhû*.[11] This form, based

[7] Albright, in H. H. Rowley, *The Old Testament and Modern Study*, p. 17, n. 1.
[8] Col. 1, line 28.
[9] See Albright, JBL LXIX (1950), p. 389.
[10] Tallqvist, *Assyrian Personal Names*, p. 219b.
[11] Albright, JBL XLVI (1927), p. 166.

on the jussive, was paralleled by another form based on the imperative: e.g. *Ḥezaqyáhû* > *Ḥizqiyāhû*, which is found in the third campaign of Sennacherib as *Ḥa-za-qi-ia-u*, standing for **Ḥezaqyāhû*. DSIa **Yeḥuzqîyāh* is best explained as a conflation of **Ḥuzqîyāh* with *Yeḥizqiyāhû*.[12]

In 59[10] there occurs the form *'ašmannîm*, which is usually translated as a pronominal adjective, "stout" or "lusty." Gesenius would explain it as an elative of the adjective *šāmēn* "fat." DSIa reads *'SMWNYM* with a clear *waw*. LXX did not understand the form and interpreted it as a verb. This form is very likely based on *'Eshmûn*, name of the Phoenician (Canaanite) god of health (healing), with the meaning "well being, in good health."[13]

The name "Ararat" occurs in 37[38]. In DSIa the first letter is clearly not a good ' but it is also not a clear *H*. It would appear that the scribe started to write a *H* by making the vertical stroke to the right, then on discovering his error he tried to make an '. The result is rather curious. Of greater significance is the *waw* which follows. DSIa again goes back to an older form which reflects the Accadian *Urarṭu*.

'arî'el occurs five times and in each case DSIa has a clear *waw* instead of MT *yodh*, which Burrows and Trever read. The LXX reads *Ariēl* or *Ierousalēm*. The scribe was probably following an orthographic tradition which employed the variant form *'arû'ēl*: cf. *Penî'el* and *Penû'el*.

"Sodom" appears four times: 1[9, 10], 3[9], and 13[19]. MT reads *Sedōm*, whereas DSIa, has *SWDM* with a clear *waw* in each case. The LXX reads *Sodomôn*. This evidence points to an original *qutul* form. The MT *Sedōm* is similar to the treatment of the inf. construct *qetōl* which goes back to a *qutul* type. The DSIa form retained the penultimate short vowel.

The case of "Gomorrah" is identical. The MT has *'amōrāh* in all three occurrences, while DSIa reads *'omrāh* or *'ômerāh*. LXX has *Gomorra* three times, thus again testifying to a *qutul* form.

In 37[38] the name "Esarhaddon" appears with *waw* between *Ḥ* and *D*. This form is still obscure, and the writer offers no suggestions for its explanation.[14]

On the basis of the foregoing divergent pronunciations of proper names in DSIa, we may conclude that the latter followed an oral tradition superior to that exhibited by MT, nearly a thousand years later. Moreover, DSIa not only agrees in most such cases with LXX but even improves the Greek readings in several cases. The correct pronunciation of Assyrian words and names was still alive in the circles to which we owe this manuscript, though the Greek mistakes show that it was dying rapidly in some Jewish circles at an even earlier time.

Inasmuch as Isaiah was one of the most popular, if not the most popular of the prophets, there can be little doubt that the book was translated into Greek before the end of the third century B. C. Since the value of old copies of texts was well known to the Egyptians and Accadians, and was being emphasized constantly in Greek learned circles of the Hellenistic period, it is within reason to suppose that the *Vorlage*

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[12] [This does not necessarily mean that **Ḥuzqîyāh* was an alternative original form of the name (though this is quite possible), but that the first element of the name, which had been quite naturally misunderstood and treated as a noun with pronominal suffix of the first person, was corrected from a rare *ḥēzeq* to a more common *ḥōzeq*. —W.F.A.]

[13] Albright, *Archaeology and the Religion of Israel*, 2nd ed., 1946, p. 196, n. 25.

[14] [In view of such spellings of the name as [m]*Aš-šur-a-ḫu-i-d*[*i-na*] (Esarhaddon, K 2388, Tallqvist, *Assyrian Personal Names*, p. 33b) it is not impossible that the name was actually pronounced *Assōraḫwiddin* in late times, when Assyrian had already been replaced by Aramaic.—W.F.A.]

of the translation was already old when the translation was made. In other words, the Hebrew manuscript (or manuscripts) which underlay the Greek translation of Isaiah dated from the early third or even the fourth century B. C. Under such conditions we must expect the LXX to depend on a much more reliable Hebrew text than we have in the carelessly written manuscript DSIa, which was written at least a century and perhaps two centuries later than the Hebrew *Vorlage* of the LXX of Isaiah. The LXX are far superior to DSIa as a witness to the original Hebrew text, and MT reflects many centuries of careful study and reproduction of a Hebrew text which was better than DSIa—namely, the manuscript tradition reflected by DSIb. However, notwithstanding its faults, DSIa has vastly enriched our knowledge of the underlying oral tradition of pronunciation, which was still surprisingly exact in Palestinian scribal circles of the second century B. C. The value of this tradition for our comprehension of the meaning of Isaiah, as well as for our grasp of many details of Hebrew phonology and morphology, will become increasingly evident as investigation proceeds.

LIGHT ON THE MANUAL OF DISCIPLINE (DSD) FROM THE BOOK OF JUBILEES

William H. Brownlee

The importance of the Book of Jubilees to the sect of the Dead Sea Scrolls is well known. Not only does the Damascus Document (now generally recognized as belonging to the same sect as the Scrolls) make explicit mention of this book by name (CDC 20:1),[1] but a fragment of this book in Hebrew was found in the excavation of the scroll cave.[1a] In the notes to my translation of the Dead Sea Manual of Discipline,[2] I have made many references to the Book of Jubilees; but more recent study has brought to my attention other significant references which illuminate the text of DSD.

One of the most enigmatic passages of DSD is the acrostic of the word "amen" (X, 1 ff.). It is concerning the *Mem* that perhaps Jubilees

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[1] Cf. the note of R. H. Charles in the *Apocrypha and Pseudepigrapha*, Vol. II, "Fragments of a Zadokite Work," p. 833.

[1a] See R. de Vaux, *Revue Biblique*, 56 (1949), 602-605.

[2] See Brownlee, *The Dead Sea Manual of Discipline. Translation and Notes* (*Supplementary Studies* 10-12), 1951. Note the following partial list of errata discovered since the final proof was revised. On p. 35, n. 14, first line, read "usual" for "unusual." On p. 46, fifth line of translation, read "hast" not "has," and fifteenth line, read "he" not "He." On p. 54, line 5, correct "read as *Niph'al* perfect." On page 59, line 24 f. read, "and the early third century A. D." I likewise wish to propose a conjectural restoration of a conjectured omission in the text of DSD vi, 13: "If they bid him, he shall speak and finish [speaking. And everyone] from Israel who dedicates himself . . ." (restoring thus: *wdbr wkylh [ldbr wkwl h]mtndb myśr'l*). For the proposed omission by haplography, cf. DSD vi, 10, "before his brother *finishes speaking*."

sheds important light. One of the key words for which the *Mem* stands is "luminaries" (*m'wrwt*) (x, 3), and it is concerning them x, 4 relates, "As they renew themselves, the *Mem* is large for the holy of holies." With this cf. Jub. 1:29:

> . . . from the day of the new creation when [or perhaps (by emendation), from the day of creation until] [3] *the heavens and the earth be renewed* and all their creation according to the powers of the heaven, and according to all the creation of the earth, until the *sanctuary* of the Lord shall be made in Jerusalem on Mount Zion, and all the *luminaries be renewed* for healing and for peace and for *blessing* for all the elect of Israel. . . .

The renewal of the luminaries,[4] the reference to the sanctuary (cf. "holy of holies" in DSD), and the association with blessing (cf. DSD ix, 26; x, 6) present us with a three-fold literary bond between DSD and the Book of Jubilees. Jub. 19:25 also mentions the renewal of the luminaries in connection with blessings (19:23 f.).

Literary reflection of Jubilees may also appear in DSD iv, 6 f., "And the visitation of all who walk by it [i. e., by the Spirit of truth] consists in healing and abundant peace during length of days, and to bear seed with all everlasting blessings." Abraham is said to have fulfilled this ideal in Jub. 22:7, where the Patriarch says of himself, "Behold I am one hundred three score and fifteen years, an old man and full of days,[5] and *all my days have been unto me peace*." After Abraham the longevity of human life was diminished by means of various afflictions including disease (23:12 f.) and for even the most aged "the greater part of his days are pain and sorrow and tribulation and there is *no peace*"; but in the Messianic age the length of human life will approach a thousand years (23:27) and "all their days they shall complete and live in peace and joy . . . For all their days shall be days of blessing and *healing*."[6] For the idea of bearing "seed with all everlasting blessings" one may compare the blessings upon descendants in Genesis and Jubilees, noting particularly the language of Jub. 26:24; 36:16.

A number of briefer comparisons may be made. With "to practice truth and righteousness and justice in the land or earth" (DSD i, 5 f.) cf. Jub. 20:2 and 36:3. "To atone for the earth" (DSD viii, 6, 9½) may be compared with the identical phrase in Jub. 6:2. As for invoking divine blessing at meals (DSD vi, 6), note Jub. 20:9.

After presenting the liturgy of entering the convenant (DSD i, 1-ii, 18), DSD states (ii, 19), "Thus shall they do year by year all the days

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[3] The correction is proposed by R. H. Charles, *op. cit.*, p. 13. [Eth. *'eska* "until," appears in Charles' MS D as a correction by the native scribe.—W.F.A.]

[4] Cf. "the new heavens and the new earth" of Is. 65:17; 66:22, and cf. "the making of the New" (DSD iv, 25).

[5] Eth. *feşûm mawâ'el* (W.F.A.). The phrase "length of days" in DSD (with which cf. Ps. 23:6) likewise relates to a long life span.

[6] Cf. the word "healing" in DSD, *loc. cit.* Jubilees places considerable emphasis upon healing, relating that the angels gave Noah special training with regard to the preparation of medicines (Jub. 10:10, 12). Josephus (JA II, viii, 6) observes that the Essenes "make investigations into medical roots and the properties of stones," a practice which is in keeping with the interest of Jub. in medicines.

of the dominion of Belial." I have discussed this yearly renewal of the Covenant in Appendix G where I suggest in Note 3: " . . . this anniversary would be expected to fall upon some holy day, specifically chosen (in the first place) because of its appropriateness for enacting the New Covenant." [7] The date of this observance may possibly be fixed from Jub. 6:17: " For this reason it is ordained and written on the heavenly tablets, that they should celebrate the feast of weeks in this month once a year, *to renew the covenant every year*." The Feast of Weeks (later known as Pentecost) as prescribed in Jubilees fell in the middle of the third month (Sivan 15) rather than according to the Pharisaic practice on the sixth of the month (Sivan 6).[8] Jubilees' midrashic treatment of the word " weeks " (Heb. *šābûʿôt*) apparently takes the word to mean " oaths " (same consonants, Heb. *šᵉbûʿôt*, with slightly different vocalization); [9] for it brings the Feast of Weeks into association with the covenant of Noah (6:17 f.), the birth of Isaac in fulfillment of God's covenant with Abraham (16:13, cf. 17:1), and with Beersheba (the " Well of the Oath ") (22:1; 44:1 ff.) where God renewed the Covenant with Jacob before his departure into Egypt (44:4-6). Moses observed this festival upon his arrival at Mt. Sinai (6:19) and the day following he received the revelation of the Torah as presented in Jub. (1:1). In view of this repeated emphasis upon the Feast of Weeks as a time of covenanting (particularly 6:17), it seems probable to me that this was the occasion of the annual covenanting of the Sectaries of the Dead Sea Scrolls.

M. H. Segal has already observed the relationship between DSD i, 14 f. and the solar calendar of Jubilees, noting that if one were to observe the holy seasons according to the Pharisaic lunar months he would according to Jub. observe the festivals too early (cf. Jub. 6: 36) and that if he adopted the Pharisaic practice of intercalation with the purpose of adjusting the lunar year to the solar year he would find himself observing the holy seasons too late.[10]

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[7] *Op. cit.*, p. 53.

[8] For a discussion of these dates for Pentecost, cf. Charles, *op. cit.*, Jub. 15:1 with notes, pp. 34 f.

[9] Solomon Zeitlin, JQR 40, 245, argues that the correct translation is " Festival of Oaths " rather than " Festival of Weeks." It seems to me, however, that it is simply a matter of midrashic verbal play which attaches both meanings to the phrase. The description of the feast as " the feast of the first-fruits of the grain harvest " (Jub. 15:1; cf. 6:21) makes the identification of this feast with the Feast of Weeks appear certain (cf. Ex. 34:22; Lev. 23:15-17). The difficulty with this identification which Zeitlin expresses is valid (unless dating is a factor) only if the book is Pharisaic rather than Essene (which appears probable from the evidence of the Dead Sea Scrolls).

[10] M. H. (S. in Hebrew) Segal, " On Problems of the Cave Scrolls " (*Eretz-Israel*, Vol. I [Jerusalem, Israel Exploration Society, 1951]), p. 43.

PHOTOGRAPHY AND PALEOGRAPHY IN THE TEXTUAL CRITICISM OF ST. MARK'S ISAIAH SCROLL, 43:19.

HARRY M. ORLINSKY

1. The primary purpose of this note is not to argue in favor of either *netibim* or *netibot* as the reading of the St. Mark's Isaiah Scroll (= SM), 43:19, or in favor of masoretic *neharot* as against the reading in SM, but to set the record straight.[1]

2. As a result of some correspondence among Dr. Albright, Dr. Burrows and myself, in which the last two read *netibṯm* in SM as against *netibot*, Burrows asked Dr. Trever to check the reading from his color photograph.[2] In his letters of Oct. 3,

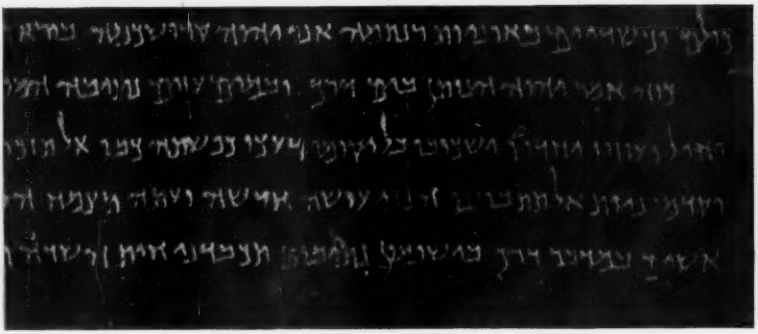

FIG. 1. Isa. 43:14-19 in the Dead Sea Scroll, a negative print from Trever's original color transparency.

1950, Trever wrote, "This negative-type print was made by exposing the original color transparency directly on to a special color-sensitive opaque-backed film, enlarging it to the maximum magnification permitted by my enlarger. As a result of this print and a careful study of the original color transparency under a magnifying glass, I have come to the conclusion that my earlier impression that this was a *taw* was wrong. It is quite definitely a *mem*. The color film shows definite traces of a continuous stroke from the right upper corner of the letter to the lower left, and the lower left projection is not a part of the left upright stroke, but rather a continuation of the right stroke. There is a slight break in the right stroke at the bottom as a result of flaking of the ink, but on the color picture the traces are obvious, and my reproduction of it enclosed here even shows more than in our volume.

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[1] Trever is less than accurate when he states (BULLETIN, 121, Feb. 1951, 13), "Though Orlinsky uses several arguments, he seems to put considerable emphasis upon the fact that Dr. Millar Burrows . . . decided the word was *netibim* and not *netibot*." Trever is likewise less than fair when he asserts (*ibid.*, n. 3) that "Dr. Albright took issue with Orlinsky in BULLETIN, 118, p. 6" and suppresses the name of Burrows (Albright wrote, ". . . the text of the scroll certainly read *nᵉṯîbôṯ*, not *nᵉṯîbîm*, in spite of the editor," viz., Burrows).

[2] P. A. H. de Boer, unaware apparently of my discussion in *JBL*, 49 (June, 1950), 160-164, would regard Burrows' *netibim* as "A Mistranscription" of *netibot* (*Vetus Testamentum*, 1 [Jan. 1951], 68); so too D. Barthélemy, O.P., in *Revue biblique*, 58 (1950), 536, "Et pourquoi . . . créer une forme *hapax*: *netibim* au lieu du *netibot* familier à l'auteur?"

"There is even a slight hump above the top line where the left stroke protruded or began as so often with *mem*. The crack in the parchment is a disturbing factor, but the color picture shows that it is not a complete break and also that there is no displacement at this point which might cause the peculiar shape of *taw* as has been suggested."

3. In support of his conclusion that the letter in question was a *mem*, Trever sent, as he put it, "a tracing, natural size, of the letter as it appears when the color picture is projected on to a white piece of paper. I made eight of them in a row, the only difference being that I filled in the gap at the bottom."

4. As a result of a fresh examination of the original scroll at the disputed point, and an infra-red photograph of it, Trever is now convinced that the letter in question is not a *mem* but a *taw*: "On examining the original with a magnifying glass, it became clear that what I thought was ink on top of the left stroke at the bottom actually was an encrustation of formation matter which appears in several parts of the somewhat round blemish on the leather where the word was inscribed. In fact, this darker spot on the leather, which can be clearly seen in the published text, is

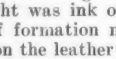

Fig. 2. Trever's tracings from his photo reproduced in Fig. 1.

a defective part of the skin and probably was more porous than the surrounding leather, which may account for the somewhat thicker letters of this word which lies within the blemish. On closer examination it soon became apparent that the right hand stroke does not continue to the left as I had thought, but stops definitely at the exact point shown on the published text, and I could find no trace of ink beyond. What appeared to be traces in the color photographs were bits of foreign matter on the surface . . ." (BULLETIN, 121, pp. 13-14). I have reproduced here Trever's own two tracings of the final letter in question (then thought by him to be *taw*) as Fig. 2; Fig. 1 is the print which he sent me Oct. 3, 1950. For his subsequent photograph see the reproduction in BULLETIN, 121, p. 14.

5. It is a pity that the scroll itself is not available directly. It would be interesting to determine precisely why "an encrustation of formation matter" fitted perfectly into what would normally be the horizontal line at the bottom of the *mem*, so much so that Trever wrote (Oct. 3, 1950), "It is quite definitely a *mem*. . . . There is a slight [sic!] break in the right stroke at the bottom as a result of flaking of the ink, but on the color picture the traces are obvious, and my reproduction of it . . . even shows more than in our volume."

6. It is not merely the coincidence of "an encrustation of formation matter" fitting into the groove of a *mem* (as against a *taw*) which is remarkable here, but also the quite extraordinary fact that only at the bottom line of the alleged *mem* does this "encrustation" appear in Trever's color photograph (Fig.; as also in Burrows' edition) and disappear in his infra-red photograph (BULL. 121)[3]; and while this "encrustation of formation matter . . . appears in several parts of the somewhat round blemish on the leather where the word was inscribed . . ." (Trever, 13-14), it may very well be significant that in neither of Trever's two photographs does this "encrustation" show up as part of any other letter (or of any part of

[3] This "encrustation" appears in Burrows' edition and in Trever's color photograph (Fig.) both above and below our word, as well as in the midst of it. What is remarkable is that this "encrustation" appears everywhere also in Trever's infra-red photograph recently made especially for his article (BULL. 121) *except precisely at the bottom of our letter*. Not having handled the scroll itself, I do not know whether any ink came off at the bottom line of our letter since the earliest photographs of the scroll were made.

any other letter), nor does it present an appearance, or confusion with, a letter (or any part of one) made by ink.

7. Where there has been a defective skin, and a crack right down through the center of the defective part, and flaking of the ink, and bits of foreign matter on the surface, and encrustation of formation matter, and the like, it is clear that the original scroll requires further study at 43:19 before any decision can be reached (if any can) as to whether the present reading is beyond all doubt a *mem* or a *taw*.

8. In the matter of the hook in the upper left part of the letter, Burrows (*apud* Trever, p. 15) wrote that "... the scribe started out to write a *mem*. . . . The top line begins at the left with the little hook characteristic of the *mem*. . . ." Trever brushes this aside with the statement (p. 16), "It has already been shown that the right-hand part of the 'hook' is the result of the flaking of the ink at the edge of the crack. . . ." But surely to "assert" and to "show" are two quite different things.

9. On p. 15 Trever asks, "What are the normal characteristics of the *taw* in this MS.?", and after describing them and citing some cases in point[4] he ends up with: "When we note that the blemish on the skin caused the ink to spread slightly *and assume that the scribe's pen slipped a little to the left at the end of the right down stroke* [emphasis mine], this form of a *taw* can be accounted for."

10. On p. 15 Trever cites as normal instances of *taw* several which have "the slight curve of the right stroke toward the left," but he ends the paragraph with the argument that our own letter was formed by "the blemish of the skin" and the assumption "that the scribe's pen slipped. . . ." This seems to be a case of "Heads I win, tails you lose."

11. There is nothing in Trever's article which should cause me to change my conclusion in *JBL* (p. 163) that "it is clearly masoretic *neharot* which deserves priority over **netibot/netibim*." And just as SM altered masoretic *neharot* to *netibim/netibot* (perhaps under the influence of *//derek*), it does not seem to have been noted that so did Kenn 30 and 154 alter masoretic *derek* to *mayim* (perhaps under the influence of *//neharot*); Kenn 198 reads the conflated *mayim derek*. I suppose that it is fortunate that SM does not read *mayim*.

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[4] One has but to go through some of these examples to understand why, as Trever put it (*ibid.*), "On reading the first draft of this paper, Dr. Burrows was still not convinced. . . ." The *taw* in *byt* "house" (Col. II:8:6) proves nothing for our own letter; there is no *taw* in III:17:5; one needs have tongue in cheek to assert that "XIII:7:6 [*hbmt* "the shrines"], lower right curves to left. . . ." Incidentally, the second last letter in *netib*[*x*]*t/m* represents a *yodh* in the word immediately preceding it (*byšymwn* "in the desert").

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